



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/587,542	06/01/2000	Michael G. Luby	19186-001610US	6523

20350 7590 12/23/2003

TOWNSEND AND TOWNSEND AND CREW, LLP  
TWO EMBARCADERO CENTER  
EIGHTH FLOOR  
SAN FRANCISCO, CA 94111-3834

EXAMINER
----------

BOUTAH, ALINA A

ART UNIT	PAPER NUMBER
----------	--------------

2143

DATE MAILED: 12/23/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/587,542

Applicant(s)

LUDY, MICHAEL G.

Examiner

Alina N Boutah

Art Unit

2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 06 November 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Amendment***

This action is in response to Applicant's amendment filed November 6, 2003. Claims 5-9 have been newly added. Claims 1-9 are pending in the present application.

### ***Specification***

The disclosure was objected to because the blank spaces on page 6 were not filled. Applicant has amended the specification to overcome the rejection. It is therefore withdrawn.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Drawings***

Applicant has submitted a correction proposal to the drawing. The objection is now removed.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by "*TCP-like Congestion Control for Layered Multicast Data Transfer*" by Vicisano, Crowcroft, and Rizzo (Vicisano et al.).

(Amended) Regarding claim 1, Vicisano et al. teach in a network supporting packet multicasting from a sender into the network, where hosts join and leave a multicast group by sending join and leave messages, respectively, to an access device in the network, an improvement comprising:

a plurality of layers, wherein a layer is a logical channel that carries packets for the multicast group (figure 1);

logic for distributing multicast traffic from the sender over the plurality of layers according to a sending rate associated with each of the plurality of layers (page 996, Introduction; page 997, Layered organization of data);

logic for accepting join and leave messages at the access device from the hosts, wherein the join and leave messages are associated with one or more layers of the plurality of layers (page 996, Introduction; page 997, Multicast group membership, page 998, Congestion Control for multicast layered data); and

logic for reducing the sending rate of at least on of the plurality of layers over time (pages 996-997, Relation between throughput and loss rate).

Regarding claim 2, Vicisano et al. teach the network of claim 1 further comprising logic for raising the sending rate of an unused layer (page 996, Introduction; page 997, Multicast

Art Unit: 2143

group membership, page 998, Congestion Control for multicast layered data; page 998, Congestion Control for multicast layered data).

(Amended) Regarding claim 3, Vicisano et al. teach in a network supporting packet multicasting from a sender into the network, where hosts join and leave a multicast group by sending join and leave messages, respectively, to an access device in the network, a method comprising the steps of:

accepting multicast join messages at the access device, wherein a join message indicates that a host beyond an interface to the access device requests membership in a layer, where a layer is a logical channel over which packets are multicast to hosts that are members to a multicast group for the layer (page 996, Introduction; page 997, Layered organization of data);

transmitting multicast packets to a plurality of layers, wherein multicast packets are transmitted by the sender on a given layer at a rate approximately equal to a sending rate associated with the layer (page 996, Introduction; page 997, Layered organization of data);

accepting multicast leave messages at an access device from hosts, wherein a leave message indicates that a host requests removal from a layer indicated in the leave message (page 996, Introduction; page 997, Multicast group membership, page 998, Congestion Control for multicast layered data); and

reducing the sending rates for each of the layers over time, thereby reducing the reception rate of a host that is joined to be a fixed set of layers (pages 996-998, Relation between throughput and loss rate, page 998, Congestion Control for multicast layered data).

Regarding claim 4, Vicisano et al. teach the method of claim 3, further comprising a step of offsetting a reduced reception rate at a host due to a reduced sending rate for each of the layers by the host joining one or more additional layers, if a reception rate at the host is to be maintained (pages 996-996, Relation between throughput and loss rate, page 998, Congestion Control for multicast layered data).

(New) Regarding claim 5, Vicisano teaches the method of claim 3, wherein the step of reducing the sending rates includes reducing the sending rate for a selected one of the layers to zero (figure 3).

(New) Regarding claim 6, Vicisano teaches the method of claim 5, further comprising a step of increasing the sending rate for the selected one of the layers after an idle period has elapsed (figure 3).

(New) Regarding claim 7, Vicisano teaches the method of claim 6, wherein the idle period is longer than a leave latency associated with the access device responding to a leave message (page 996, Introduction; page 997, Layered organization of data).

(New) Regarding claim 8, Vicisano teaches in a network supporting packet multicasting form a sender into the network, where hosts join and leave a multicast group by sending join and leave messages, respectively, to an access device in the network, a method comprising the steps of:

Art Unit: 2143

transmitting multicast packets to a plurality of dynamic layers at a rate approximately equal to an aggregate sending rate (page 996, Introduction; page 997, Layered organization of data);

reducing a sending rate for a first one of the plurality of dynamic layers over time (pages 996-998, Relation between throughput and loss rate, page 998, Congestion Control for multicast layered data); and

concurrently with the step of reducing, increasing a sending rate of at least one other of the plurality of dynamic layers, thereby maintaining the aggregate sending rate for the plurality of dynamic layers (pages 996-998, Relation between throughput and loss rate, page 998, Congestion Control for multicast layered data).

(New) Regarding claim 9, Vicisano teaches the method of claim 8, wherein a host connected to the network is able to maintain a reception rate over time by joining the at least one other dynamic layer (page 997, Multicast group membership, second paragraph).

### ***Response to Arguments***

Applicant's arguments have been fully considered but they are not persuasive.

Applicant argues that Vicisano does not disclose or suggest “logic for reducing the sending rate of at least on of the plurality of layers over time.” The Patent Office submits that this limitation is indeed taught by Vicisano in page 997, left column, lines 1-3. It clearly states that a congestion control algorithm must react signals by reducing the transmission rate.

Art Unit: 2143

“Reducing transmission rate” is interpreted as “reducing the sending rate” as specified in the claim.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alina N Boutah whose telephone number is (703) 305-5104. The examiner can normally be reached on Monday-Thursday (9:00 am-7:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, David A Wiley can be reached on (703) 308-5221. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.



Art Unit: 2143

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

*ANB*

ANB

  
**DAVID WILEY**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2100**